

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 4-7 and 12-16 are presently active in this case. The present Amendment amends Claims 4-7, 12, and 14; and adds new Claims 15-16 without introducing any new matter.

The outstanding Office Action objected to the amendment under 35 U.S.C. §132(a) as introducing new matter to the disclosure. Claims 4-7 and 12-14 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claims 4-7 and 12-14 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Claims 4-7 and 12-14 were objected to because of informalities. Claims 4-6, 12 and 14 were rejected under 35 U.S.C. §103(a) as unpatentable over Nakanishi et al. (U.S. Patent No. 6,728,034, herein "Nakanishi"). Claims 7 and 13 were rejected under 35 U.S.C. §103(a) as unpatentable over Nakanishi in view of Chen et al. (U.S. Patent No. 5,914,811, herein "Chen").

Initially, Applicants respectfully request that the references cited in the Information Disclosure Statement, filed July 14, 2004, including references considered in an International Preliminary Examination Report (IPER), be acknowledged as having been considered in the next Office Action.

In response to the rejections of Claims 4-7 and 12-14 under 35 U.S.C. §112, first paragraph, and the objection to the amendment under 35 U.S.C. §132(a), Claims 4-7, 12, and 14 are amended to clarify Applicants' invention. In particular, independent Claim 4 is amended to recite "a second outgoing-side diffraction grating covered by a reflective layer,"¹ and to recite "the second outgoing-side diffraction grating positioned on a light path of a light

¹ Finds non-limiting support in Applicants' specification as originally filed, for example at page 36, lines 5-19 and in corresponding Figure 1.

diffracted by said incoming-side diffraction grating.”² Claims 5-7 are further amended to change the “first outgoing side diffraction grating” to the “second outgoing side diffraction grating,” thereby finding support in the specification, for example from page 35, line 16 to page 35, line 19 and in Figures 1-4. Furthermore, independent Claims 12 and 14 are amended to change the rejected and objected features analogous to the amendments to independent Claim 4. In view of amended Claims 4-7, 12 and 14, the objection under 35 U.S.C. §132(a) and rejections under 35 U.S.C. §112, first paragraph are moot and Applicants respectfully request reconsideration of these rejections.

In response to the outstanding Office Action asserting that Claims 4, 12 and 14 do not read upon the elected invention, Applicants respectfully traverse such position. The Restriction Requirement of August 19, 2004 has identified two species, specie (A) being represented by Figure 1 with diffraction grating formed *on both surfaces of the substrate*, and specie (B) being represented by Figure 7, with diffraction gratings formed *on one surface of the substrate*.³ Since Claims 4-7 are directed to a diffraction element with incoming-side diffraction grating and outgoing side diffraction grating, the invention as recited in Claims 4-7 reads upon the elected invention of specie (A). Nowhere the Restriction Requirement identifies a specie with a particular location of a reflection grating.

In response to the objection to the term “saw-tooth shape” of Claim 7, Applicants respectfully submit that Claim 7 depends upon Claim 5, and not upon Claim 6, as erroneously asserted in the outstanding Office Action at page 5, lines 14-15.

To vary the scope of protection recited in the claims, new Claims 15-16 are added. New Claim 15 depends upon Claim 4 and recites “the incoming side diffraction grating and the first outgoing-side diffraction grating are arranged in a main axis of the external light,

² Idem, for example in original Claim 2, and Figures 1 and 3.

³ See the August 19, 2004 Restriction Requirement at page 2, lines 7-8.

both diffraction gratings being centered on the substrate.”⁴ New Claim 16 depends upon Claim 4 and recites a feature regarding the width of the incoming-side diffraction grating and the external light.⁵ Since new Claims 15-16 find non-limiting support in the disclosure as originally filed, they are not believed to raise a question of new matter.⁶

In response to the rejections of Claims 4-7 and 12-14 under 35 U.S.C. §103(a), Applicants respectfully request reconsideration of these rejections and traverse the rejections, as discussed next.

Briefly recapitulating, Applicants’ Claim 4 relates to a diffraction element and includes, *inter alia*: a substrate with an incoming-side surface opposite to an outgoing-side surface, the incoming-side surface configured to receive light external to the substrate; an incoming-side diffraction grating; a first outgoing-side diffraction grating, a second outgoing-side diffraction grating covered by a reflective layer and having a concave/convex shape in cross-section, the second outgoing-side diffraction grating positioned on a light path of a light diffracted by said incoming-side diffraction grating.

As explained in Applicants’ Specification at page 14, lines 10-14 with corresponding Figure 1, Applicants’ invention improves upon conventional diffraction elements because it can reduce the effects related changes in propagation direction of the diffracted light when the wavelength of the diffracted light is not constant.

Turning now to the applied references, Nakanishi discloses a diffractive optical element, however Nakanishi fails to teach or suggest a second outgoing-side diffraction grating covered by a reflective layer and having a concave/convex shape in cross-section. In Nakanishi, the reflective layers 7, 8 are formed on the main surface 2 of the substrate 1,⁷ and

⁴ Finds non-limiting support in Applicants’ specification as originally filed, for example in Figure 1.

⁵ Idem from page 36, line 20 to page 37, line 9, and in corresponding Figure 1.

⁶ See MPEP 2163.06 stating that “information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter.”

⁷ See Nakanishi in Figure 7A and at column 8, lines 37-52.

are not positioned on diffraction gratings. None of the diffraction gratings in Nakanishi are covered with a reflective layer.

The reference Chen, used by the outstanding Office Action as a secondary reference to form a 35 U.S.C. §103(a) rejection, does not remedy the deficiencies of Nakanishi. Chen is concerned with polarizing beam splitters, and Chen's beam splitters do not reflect the light back into the substrate material. Accordingly, Chen is also silent on the outgoing-side diffraction grating covered by a reflective layer, as recited in Applicants' Claim 4.

Therefore, even if *in arguendo* the combination of Nakanishi and Chen is assumed to be proper, the combination fails to teach every element of the claimed invention. Specifically, the combination fails to teach the diffraction grating covered by a reflective layer and having a concave/convex shape in cross-section, as recited in Applicants' Claim 4. Accordingly, for at least the above stated reasons, Applicants respectfully traverse, and request reconsideration of, this rejection based on these patents.⁸

Independent Claims 12 and 14 recite limitations analogous to the limitations recited in independent Claim 4. Moreover, Claims 12, and 14 have been amended in a manner analogous to the amendment to Claim 1. Accordingly, for the reasons stated above for the patentability of Claim 4, Applicants respectfully submit that the rejections of Claims 12, and 14, and all associated dependent claims, are also believed to be overcome in view of the arguments regarding independent Claim 4.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 4-7 and 12-16 is earnestly solicited.

⁸ See MPEP 2142 stating, as one of the three "basic criteria [that] must be met" in order to establish a *prima facie* case of obviousness, that "the prior art reference (or references when combined) must teach or suggest all the claim limitations," (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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